

We claim:

1. An apparatus for validating the presence of an authorized accessory of a device, the apparatus comprising
 - 5 an integrated circuit which stores a secret key K , is configured to define a random number generator which returns R and is configured to apply a function $F[R]$ to return $F_K[R]$, based on the secret key K ; and
 - a control system which is configured to request $F_K[R]$ from the integrated circuit and from a further integrated circuit positioned on the accessory and to compare $F_K[R]$ from both the
 - 10 integrated circuits.
2. An apparatus as claimed in claim 1, in which the function $F[R]$ is a one-way function.
3. An apparatus as claimed in claim 1, in which the integrated circuit is configured to
15 advance R to next in sequence with each invocation of the random number generator.
4. An apparatus as claimed in claim 3, in which the integrated circuit includes a linear feedback shift register which defines the random number generator.
- 20 5. An apparatus as claimed in claim 1, in which the control system is configured to determine whether or not $F_K[R]$ generated by the integrated circuit of the apparatus is equal to $F_K[R]$ generated by the integrated circuit of the accessory and to validate the accessory if said values are equal.
- 25 6. A method of validating the presence of an authorized accessory of a device, the method comprising the steps of:
 - storing a secret key, K , in an integrated circuit of the device and in an integrated circuit of the accessory;
 - generating a random number R with the integrated circuits;
 - 30 applying a function $F[R]$ to R using K at each integrated circuit to return $F_K[R]$ at each integrated circuit;
 - requesting $F_K[R]$ from both integrated circuits; and

comparing $F_K[R]$ from both integrated circuits.